Abstract

An oscillating motor 10 has a rotor rotation of about ±15° from a rest position. The rotor 11 has two salient poles 12 which face a respective permanent magnet 13 across a small air gap 14. The stator has a laminated stator core 15 supporting the magnets 13 and also two salient poles 16 each supporting a stator coil 17. The stator poles 16 confront the rotor across a small air gap 18 between the rotor poles. When no current is flowing through the coils, the rotor 11 rests in a rest position with the poles 12 aligned between the north and south poles of the magnets 13. During operation, the stator coils 17 induce like magnetic poles in the stator poles 16 which in turn induce like magnetic poles in the rotor poles 12 causing the rotor 11 to swing towards opposite magnetic poles of the permanent magnets 13. When current flows in the reverse direction, the rotor 11 swings to the opposite poles of the magnets 13. Passing alternating current through the stator coils 17 causes the rotor 11 to swing or oscillate continuously through a small angular range.

Figure 1